



7-9-04

IFC

PTO/SB/21 (02-04)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**TRANSMITTAL
FORM**

(to be used for all correspondence after initial filing)

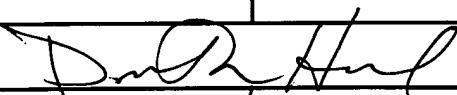
		Application Number	10/821,454
		Filing Date	April 9, 2004
		First Named Inventor	Changzhou Wang
		Art Unit	unknown
		Examiner Name	TBA
Total Number of Pages in This Submission		Attorney Docket Number	7784-000707

ENCLOSURES (check all that apply)

<input type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance Communication to Group
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment / Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Terminal Disclaimer	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Request for Refund	Return Postcard
<input checked="" type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> CD, Number of CD(s) _____	
<input type="checkbox"/> Certified Copy of Priority Document(s)		
<input type="checkbox"/> Response to Missing Parts/ Incomplete Application		
<input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53		

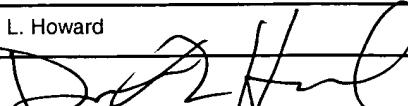
Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Harness, Dickey & Pierce, P.L.C.	Attorney Name David L. Howard	Reg. No. 41,502
Signature			
Date	7/8/04		

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Typed or printed name	David L. Howard	Express Mail Label No.	EV 298497168 US
Signature		Date	7/8/04

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

EVI 298497168 US



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/821,454

Filing Date: April 9, 2004

Applicant: Changzhou Wang

Group Art Unit: unknown

Examiner: TBA

Title: System and Method for Analyzing A Pattern in a Time-Stamped Event Sequence

Attorney Docket: 7784-000707

Commissioner of the United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

Pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, Applicant hereby submits an Information Disclosure Statement for consideration by the Examiner.

I. LIST OF PATENTS, PUBLICATIONS, AND OTHER INFORMATION

The patents, publications and other information requested to be considered by the Office (except unpublished U.S. patent applications) are listed on Form 1449 attached hereto.

II. COPIES

A. ____ Submitted herewith is a legible copy of (i) each U.S. patent application publication and U.S. and foreign patent; (ii) each publication or that portion which caused it to be listed; (iii) for each cross-referenced pending U.S. application listed below in Section IV, the application specification including the claims, and any drawing of the application which caused it to be listed including the claims directed to that portion; and (iv) all other information or that portion which caused it to be listed.

B. ____ Any patents, publications or other information which are listed on Form 1449 or on the copies of PTO-892, but which are not enclosed herewith, were previously cited by or submitted to the PTO in one of the following applications which has been relied upon for an earlier filing date under 35 U.S.C. § 120:

EVL 298497168 US

U.S. Serial Number

U.S. Filing Date

C. Because the present application was/is being filed after June 30, 2003, no copies of the U.S. patents or U.S. patent application publications which are listed on the attached Form 1449 are enclosed pursuant to the waiver of 37 C.F.R. § 1.98(a)(2)(i). Any foreign patent documents or non-patent literature listed on the attached Form 1449 are enclosed herewith.

D. This is a PCT application in the entry of the National Phase in the United States. A copy of the International Search Report is attached for the Examiner's information. The documents listed on the International Search Report are listed on the attached Form-1449 for consideration by the Examiner and for listing on any patent resulting from this application. If the International Search Report was from the US, EPO, or JPO search authorities, copies of these references should have been supplied to the USPTO under the trilateral agreement and are believed to be in the file of the above-identified application. (MPEP 1893.03(g))

III. CONCISE EXPLANATION OF THE RELEVANCE (check at least one box)

A. Except as may be indicated below in (B), all of the patents, publications or other information are in the English language (concise explanation not required).

B. A concise explanation of the relevance of each patent, publication or other information listed that is not in the English language is as follows (see 37 C.F.R. § 1.98(a)(3)):

1. See the attached foreign patent office communication from a counterpart foreign application.
2. English translations are provided.
3. Other:

C. The following additional information is provided for the Examiner's consideration.

IV. CROSS REFERENCE TO RELATED APPLICATION(S)

A. The Examiner is advised that the following co-pending application(s) contain(s) subject matter that may be related to the present application. By bringing this(these) application(s) to the Examiner's attention, Applicant(s) does(do) not waive the confidentiality provisions of 35 U.S.C. § 122.

Serial No.

Filing Date

Art Unit

V. THIS IDS IS BEING FILED UNDER (Check A, B, or C)

A. 37 C.F.R. § 1.97(b): (check only one box)

1. within three months of the filing date of a national application other than a continued prosecution application under § 1.53(d) (37 C.F.R. § 1.97(b)(1)). No fee or certification is required.

2. within three months of the date of entry of the national stage as set forth in §1.491 in an international application (37 C.F.R. § 1.97(b)(2)). No fee or certification is required.

3. before the mailing of a first Office Action on the merits (37 C.F.R. § 1.97(b)(3)). No fee or certification is required. In the event that a first Office Action on the merits has been issued, please consider this IDS under 37 C.F.R. § 1.97(c) and see the certification under 37 C.F.R. § 1.97(e) below; or, if no certification has been made, charge our deposit account a fee in the amount of \$180.00 as required by 37 C.F.R. § 1.17(p).

4. before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No fee or certification is required.

B. **37 C.F.R. § 1.97(c):** (check only one box)

before the mailing date of either any Final Office Action under 37 C.F.R. § 1.113, a Notice of Allowance under 37 C.F.R. § 1.311, or an action that otherwise closes prosecution.

1. No certification; therefore, a fee in the amount of \$180.00 is required by 37 C.F.R. § 1.17(p).

2. See the certification below. No fee is required.

C. **37 C.F.R. § 1.97(d):**

after the mailing date of either a Final Office Action under 37 C.F.R. § 1.113 or a Notice of Allowance under 37 C.F.R. § 1.311, yet on or before payment of the issue fee.

1. See the certification below. A fee in the amount of \$180.00 is required by 37 C.F.R. § 1.17(p).

VI. **CERTIFICATION UNDER 37 C.F.R. § 1.97(e):** (check only one box)

The undersigned hereby certifies that:

A. each item of information contained in this IDS was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS (See 37 C.F.R. § 1.97(e)(1)). See further statement under 37 C.F.R. 1.704(d) below in section VII, if applicable; or

B. no item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this IDS (See 37 C.F.R. § 1.97(e)(2)).

C. Some of the items of information were first cited in a communication from a foreign patent office. As to this information, the undersigned hereby certifies that each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby certifies that no item of this remaining information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this IDS.

VII. STATEMENT UNDER 37 CFR 1.704(d)

The undersigned hereby states that:

each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this IDS.

VIII. PAYMENT OF FEES (check only one box)

A. A check in the amount of \$180.00 is enclosed for the above-identified fee.

B. Please charge Deposit Account No. 08-0750 in the amount of \$180.00 for the above-indicated fee. A duplicate copy of this paper is attached.

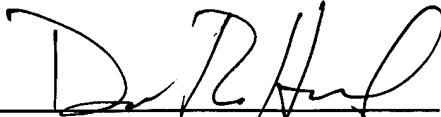
The above references are being cited only in the interest of candor and without any admission that they constitute statutory prior art, contain matter which anticipates the invention, or which would render the same obvious, either singly or in combination, to a person of ordinary skill in the art. Furthermore, this Information Disclosure Statement shall not be construed as a representation that a search has been made.

If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule (with a petition if necessary) and charge the appropriate fee to Deposit Account No. 08-0750.

Please charge any additional fees or credit any overpayment pursuant to 37 C.F.R. § 1.16 or § 1.17 to Deposit Account No. 08-0750.

Respectfully submitted,

Dated: 7/8/04

By: 

David L. Howard, Reg No. 41,502

HARNESS, DICKEY & PIERCE, P.L.C.
7700 Bonhomme Avenue, Suite 400
St. Louis, MO 63105
(314) 726-7500



FORM HDP-1449 (Based on Form PTO-1449)

**PATENT AND TRADEMARK OFFICE
INFORMATION DISCLOSURE CITATION**
(Use several sheets if necessary)

Sheet 1 of 4

ATTORNEY DOCKET NO.	SERIAL No.
7784-000707	10/821,454
APPLICANT	
Changzhou Wang	
FILING DATE	GROUP
04/09/2004	unknown

U.S. PATENT DOCUMENTS

Ref. Desig.	Examiner's Initials	Document Number	Date	Name	Class/ Subclass	(If appropriate) Filing Date
1.		6,539,373	Mar. 25, 2003	Guha	707/3	May 11, 2000
2.		6,526,405	Feb. 25, 2003	Mannila, et al.	707/6	Dec. 17, 1999
3.		6,516,288	Feb. 4, 2003	Bagne	702/179	Oct. 10, 2001
4.		6,496,817	Dec. 17, 2002	Whang, et al.	707/2	Apr. 27, 2000
5.		6,473,757	Oct. 29, 2002	Garofalakis, et al.	707/6	Mar. 28, 2000
6.		6,385,608	May 7, 2002	Mitsuishi, et al.	707/6	Nov. 5, 1998
7.		6,317,700	Nov. 13, 2001	Bagne	702/181	Dec. 22, 1999
8.		6,292,802	Sep. 18, 2001	Kessenich, et al.	707/101	May 9, 2000
9.		6,272,478	Aug. 7, 2001	Obata, et al.	706/12	Dec. 31, 1997
10.		6,236,982	May 22, 2001	Mahajan, et al.	706/45	Sep. 14, 1998
11.		6,230,151	May 8, 2001	Agrawal, et al.	706/12	Apr. 16, 1998
12.		6,212,525	Apr. 3, 2001	Guha	707/101	Feb. 24, 1999
13.		6,189,005	Feb 13, 2001	Chakrabarti, et al.	707/6	Aug. 21, 1998
14.		6,185,559	Feb. 6, 2001	Brin, et al.	707/6	May 9, 1997
15.		6,138,117	Oct. 24, 2000	Bayardo	707/6	Apr. 29, 1998
16.		6,105,032	Aug. 15, 2000	Bunda, et al.	707/101	Jun. 5, 1998
17.		6,094,645	Jul. 25, 2000	Aggarwal, et al.	706/47	Nov. 21, 1997
18.		6,092,065	Jul. 18, 2000	Floratos, et al.	707/6	Feb. 13, 1998
19.		6,061,682	May 9, 2000	Agrawal, et al.	707/6	Aug. 12, 1997
20.		6,055,538	Apr. 25, 2000	Kessenich, et al.	707/101	Dec. 22, 1997
21.		5,983,224	Nov. 9, 1999	Singh, et al.	707/6	Oct. 31, 1997

Examiner:

Date Considered:

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

EV 298497168 US



FORM HDP-1449 (Based on Form PTO-1449)

PATENT AND TRADEMARK OFFICE
INFORMATION DISCLOSURE CITATION
 (Use several sheets if necessary)

Sheet 2 of 4

ATTORNEY DOCKET NO.	SERIAL NO.
7784-000707/US	10/821,454
APPLICANT	
Changzhou Wang	
FILING DATE	GROUP
4/9/2001	unknown

U.S. PATENT DOCUMENTS

Ref. Desig.	Examiner's Initials	Document Number	Date	Name	Class/ Subclass	(If appropriate) Filing Date
22.		5,897,637	Apr. 27, 1999	Guha	707/101	Mar. 7, 1997
23.		5,742,811	Apr. 21, 1998	Agrawal, et al.	395/606	Oct. 10, 1995

FOREIGN PATENT DOCUMENTS

Ref. Desig.	Examiner's Initials	Document Number	Date	Country	Class/ Subclass	Translation Yes	No

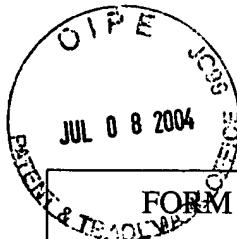
OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)

Ref. Desig.	Examiner's Initials	
1.		Agrawal, Rakesh, et al., <i>Mining Sequential Patterns</i> , ELEVENTH INTERNATIONAL CONFERENCE ON DATA ENGINEERING, Taipei, Taiwan, 1995, IEEE Computer Society Press.
2.		Gusfield, Dan, <i>Algorithms on Strings, Trees, and Sequences</i> , COMPUTER SCIENCE AND COMPUTATIONAL BIOLOGY, 1997
3.		Han, Jiawei, et al., <i>Scalable Frequent-Pattern Mining Methods: An Overview</i> , KDD TUTORIAL NOTES, 2001, August 26-29, 2001, San Francisco, CA., Cambridge University Press,. See http://www.cs.sfu.ca/~peijian/publications/kdd01.tutorial.zip
4.		Han, Jiawei, et al., <i>Mining Frequent Patterns without Candidate Generation</i> , PROCEEDINGS ON INTERNATIONAL CONFERENCE ON MANAGEMENT OF DATA 2000 (SIGMOD'00).
5.		Joshi, Mahesh et al., <i>A Universal Formulation of Sequential Patterns</i> , TECHNICAL REPORT NUMBER 99-21, May 20, 1999, Department of Computer Science, University of Minnesota, Minneapolis.
6.		Leung, Carson Kai-Sang, et al., <i>OSSM: A Segmentation Approach to Optimize Frequency Counting</i> , 18 TH INTERNATIONAL CONFERENCE ON DATA ENGINEERING 2000, February 26 – March 1 2002, San Jose, California.

Examiner:

Date Considered:

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



FORM HDP-1449 (Based on Form PTO-1449)

PATENT AND TRADEMARK OFFICE
INFORMATION DISCLOSURE CITATION
 (Use several sheets if necessary)

Sheet 3 of 4

ATTORNEY DOCKET NO.	SERIAL NO.
7784-000707/US	10/821,454
APPLICANT	
Changzhou Wang	
FILING DATE	GROUP
4/9/2001	unknown

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)

Ref. Desig.	Examiner's Initials	
7.		Mannila, Heikki, et al., <i>Discovering Generalized Episodes Using Minimal Occurrences</i> . In KDD, pgs. 146-151, 1996. See http://citeseer.ist.psu.edu/cache/papers/cs/931/http:zSzzSzpegasus.ece.utexas.eduSzcou rseSzsee380lzs
8.		Mannila, Heikki, et al., <i>Discovering Frequent Episodes in Sequences</i> . KDD TUTORIAL NOTES, pgs. 210-215, 1995. See http://citeseer.ist.psu.edu/cache/papers/cs/6623/http:zSzzSzcs.chungbuk.ac.krzSz~csgrad uzSzreferencessz
9.		Mannila, Heikki, et al., <i>Discovery of Frequent Episodes in Event Sequences, Data Mining & Knowledge</i> , TECHNICAL REPORT C-1997-15, Department of Computer Science, University of Helsinki, Finland, Series of Publications C, February 26, 1997.
10.		Pei, Jian, et al., <i>PrefixSpan: Mining Sequential Patterns Efficiently by Prefix-Projected Pattern Growth</i> ., 17 TH INTERNATIONAL CONFERENCE ON DATA ENGINEERING, April 2-6, 2001, pgs. 215-224. See http://citeseer.nj.nec.com/cache/papers/cs/27046/http:zSzzSzwww-faculty.cs.uiuc.eduSz-hanjSzpdfzSzspan01.pdf pei01prefixspan/pdf .
11.		Pei, Jian, et al., <i>Mining Sequential Patterns with Constraints in Large Databases</i> , 11 TH INTERNATIONAL CONFERENCE ON INFORMATION AND KNOWLEDGE MANAGEMENT, pgs. 18-25, November 4-9, 2002, McLean, Virginia.
12.		Roddick, John F. et al., <i>A Survey of Temporal Knowledge Discovery Paradigms and Methods</i> , IEEE TRANSACTIONS ON KNOWLEDGE AND DATA ENGINEERING, Vol 14. No. 4, 2002 pgs. 750-767.
13.		Srikant, Ramakrishnan, et al., <i>Mining Sequential Patterns: Generalizations and Performance Improvements</i> , 5TH INT'L CONFERENCE ON EXTENDING DATABASE TECHNOLOGY (EDBT), Avignon, France, 1996.
14.		Thomas, Shibly, et al., <i>Mining Generalized Association Rules and Sequential Patterns Using SQL Queries</i> , FOURTH INTERNATIONAL CONFERENCE ON KNOWLEDGE DISCOVERY AND DATA MINING, pgs. 344-348, 1998.
15.		Yang, Jiong, et al., <i>Mining Long Sequential Patterns in a Noisy Environment</i> , PROCEEDINGS OF THE ACM SIGMOD INTERNATIONAL CONFERENCE ON MANAGEMENT OF DATA, pgs. 406-417, June 3-6, 2002.

Examiner:

Date Considered:

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM HDP-1449 (Based on Form PTO-1449)

PATENT AND TRADEMARK OFFICE
INFORMATION DISCLOSURE CITATION
(Use several sheets if necessary)

Sheet 4 of 4

ATTORNEY DOCKET NO.	SERIAL No.
7784-000707/US	10/821,454
APPLICANT	
Changzhou Wang	
FILING DATE	GROUP
4/9/2001	unknown

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)

Ref. Desig.	Examiner's Initials	
16.		Zaki, Mohammed J., <i>SPADE: An Efficient Algorithm for Mining Frequent Sequences</i> , MACHINE LEARNING, Vol. 42, No. 1, pgs. 31-60, 2001.

Examiner:

Date Considered:

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.